

Serial No.: 10/564,101

Confirmation No.: 7194

Filed: June 13, 2006

For: ADHESIVE COMPOSITION WITH DECREASED POLARITY UPON POLYMERIZATION

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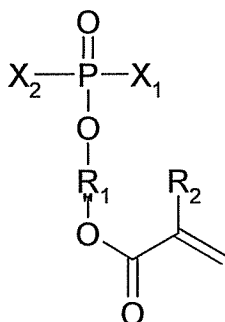
**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-18 (Cancelled).

19. (Currently Amended) The dental composition of claim [[18]] 35, further comprising an additive selected from the group consisting of stabilizers, unsaturated polymers, solvents, fluoride release agents, non-reactive inorganic fillers, and photobleachable colorants.

20. (Currently Amended) The dental composition according to claim [[18]] 35, wherein component (a) is represented by formula (I)



(I)

wherein R<sub>1</sub> is selected from the group consisting of (i) an alkylene having 1 to 4 C atoms, (ii) or a bivalent organic group having 1 to 4 carbon atoms composed of two or more hydrocarbon residues bonded to one another by one or more ether or thioether linkages, and (iii) or an aryl, each optionally substituted with OH;

wherein R<sub>2</sub> is H, or CH<sub>3</sub>;

wherein X<sub>1</sub> is OH or halogen; and

wherein X<sub>2</sub> is X<sub>1</sub> or -O-R<sub>1</sub>-OOC-CR<sub>2</sub>=CH<sub>2</sub>,

and component (b) is represented by formula (II),

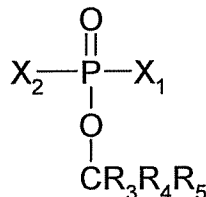
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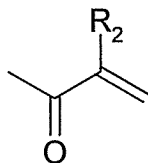
(II)

wherein R<sub>3</sub>, R<sub>4</sub>, and R<sub>5</sub> are ~~independently~~ independently selected from (i) H, (ii) linear or branched alkyl groups having 1 to 4 carbon atoms, optionally substituted with OH, (iii) aryl groups, optionally substituted with OH, and (iv) organic groups having 5 to 15 carbon atoms composed of 2 to 6 saturated or ethylenically unsaturated hydrocarbon residues bonded to one another by one or more ether, thioether, ester, thioester, thiocarbonyl, amide, urethane, carbonyl and/or sulfonyl linkages, each optionally substituted with OH,

wherein at least 2 of the groups R<sub>3</sub>, R<sub>4</sub>, and R<sub>5</sub> comprise at least 1 group according to formula (III)

or

at least 1 of the groups R<sub>3</sub>, R<sub>4</sub>, and R<sub>5</sub> comprises at least 2 groups according to formula (III)



(III)

and wherein X<sub>2</sub> = X<sub>1</sub> or -O-CR<sub>3</sub>R<sub>4</sub>R<sub>5</sub> or -O-R<sub>1</sub>-OOC-CR<sub>2</sub>=CH<sub>2</sub>.

21. (Cancelled)

22. (Currently Amended) The dental composition according to claim [[18]] 35, wherein the total amount of components (a) and (b) in the composition is about 10 to about 90 parts by weight.

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23. (Currently Amended) The dental composition according to claim [[18]] 35, wherein the prepolymer is present in an amount of about 0 to about 30 parts by weight.

24. (Previously Presented) The dental composition according to claim 23, wherein the prepolymer does not contain any hydroxy, acidic or ionic groups.

25. (Previously Presented) The dental composition according to claim 23, wherein the prepolymer has an Mw in the range of about 600 to about 20000.

26. (Currently Amended) The dental composition according to claim [[18]] 35 having a contact angle versus deionized water of more than 15°, if the composition is cured in the presence of air, and of more than 50°, if the composition is cured in the absence of air.

27. (Currently Amended) The dental composition according to claim [[18]] 35 having an adhesion to enamel and/or dentin in the range of about 2 to about 15 MPa.

28. (Currently Amended) The dental composition according to claim [[18]] 35 having a water uptake of less than 5 % by weight with respect to the cured composition measured after having immersed the composition for 5 h in water of 37°C.

29. (Previously Presented) The dental composition according to claim 27 having an enamel adhesion of at least 5 MPa.

30. (Currently Amended) The dental composition according to claim [[18]] 35, wherein component (a) is selected from the group consisting of 2-methacryloyloxyethyl phosphate, 2-methacryloyloxypropyl phosphate, 3-methacryloyloxypropyl phosphate, 2-methacryloyloxybutyl phosphate, 3-methacryloyloxybutyl phosphate, 4-methacryloyloxybutyl phosphate, 5-

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methacryloyloxy-3-oxa-pentyl phosphate, bis(2-methacryloyloxyethyl) phosphate, bis(2-methacryloyloxypropyl) phosphate, bis(3-methacryloyloxypropyl) phosphate, bis(2-methacryloyloxybutyl) phosphate, bis(3-methacryloyloxybutyl) phosphate, bis(4-methacryloyloxybutyl) phosphate, bis(5-methacryloyloxy-3-oxa-pentyl) phosphate, and mixtures thereof.

31. (Currently Amended) The dental composition according to claim [[18]] 35, wherein component (b) is selected from the group consisting of glycerol-1,3-dimethacrylate-2-phosphate, glycerol-1,2-dimethacrylate-3-phosphate, bis(glycerol-1,3-dimethacrylate) phosphate, bis(glycerol-1,2-dimethacrylate) phosphate, (glycerol-1,2-dimethacrylate),(glycerol-1,3-dimethacrylate) phosphate, (trimethylolpropane dimethacrylate) phosphate, bis(trimethylolpropane dimethacrylate) phosphate, (trimethylolethane dimethacrylate) phosphate, bis(trimethylolethane dimethacrylate) phosphate, pentaerythritol trimethacrylate phosphate and mixtures thereof.

32-34. (Cancelled)

35. (Previously Presented) A dental composition comprising:

- a) at least one phosphoric acid ester having at least one substituent with one ethylenically unsaturated moiety, wherein the substituent is bonded to the phosphorous atom;
- b) at least one phosphoric acid ester having at least one substituent with two or more ethylenically unsaturated moieties, wherein the substituent is bonded to the phosphorous atom;
- c) at least one initiator; and
- d) an additional component selected from unsaturated monomers and unsaturated prepolymers;

wherein component (b) is present in the composition in an amount of about 150 to about 250 parts by weight based on about 100 parts by weight of component (a).